DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-009929
Date Inspected: 30-Oct-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name: Mike Gregson

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-3: 10/30/09
a111-3 Forging to a110-3 Base Plate
QA Inspector noticed this assembly 102A-3 had been previously placed in position and welder #O6, Mr. Tim O'Brian, was in process of performing submerged arc welding, on the c106 stiffener plate to a107 stiffener, designated as weld joint # W1-16, in the flat position. QA Inspector noted that this weld joint was designated as a 25mm fillet weld and QA Inspector verified Mr. O'Brian was currently qualified for this process/position. QA Inspector noted that Mr. O'Brian was utilizing OIW approved welding procedure specification (WPS 4020) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit (177 C). QA Inspector noticed QC Inspector Mike Gregson was present to monitor in-process welding parameters (amps/volts) and Mr. Gregson had previously recorded in-process welding parameters of 585 amps and 35 volts, during the welding root pass. QA Inspector verified in-process welding parameters and noted that the submerged arc welding, performed by Mr. O'Brian, appeared to be in compliance with the applicable welding procedure specification and AWS D1.5. See attached picture below.
QA Inspector noted that 100% magnetic particle testing was performed on the above mentioned root passes, by QC Inspector Mike Gregson and no rejectable indications were found, per AWS D1.5 and contract requirements.

Note: QA Inspector later noted that the following fillet weld joints were completed by Mr. O'Brian, by end of shift: WJ# W1-16, W1-12, W1-08 and W1-04.

Hinge-K Pipe Beam Assembly 102A-4: 10/30/09
a111-4 Forging to a110-4 Base Plate
QA Inspector noticed this assembly 102A-4 had been previously placed in position and welder #T23, Mr. John Tellone, was in process of performing submerged arc welding, on the a110 Base plate to ab106 stiffener, designated as weld joint # W2-23, in the flat position. QA Inspector noted that this weld joint was designated as partial joint penetration (AWS D1.5 TC-P4-S) and QA Inspector verified Mr. Tellone was currently qualified for this process/position. QA Inspector noted that Mr. Tellone was utilizing OIW approved welding procedure specification (WPS 4020) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit (177 C). QA Inspector noted that QC Inspector Mike Gregson was present to monitor in-process welding parameters (amps/volts) and Mr. Gregson had previously recorded in-process welding parameters of 573 amps and 35 volts, during the welding cover passes, which appeared to be in compliance with the applicable welding procedure specification and AWS D1.5. See attached picture below.

A&G Machining
Hinge-K Pipe Beam Fuse Assembly 120A-2: 10/30/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector arrived at AG Machine, on this date and noted that AG was in-process of final machining, on this fuse assembly 120A-2. QA Inspector spoke with AG machinist and AG explained that during the 2nd machining cut pass, approximately 3-4 surface indications were noted, that would require a weld repair to fill, prior to the final finish cut pass, to achieve a 1920mm outside diameter measurement and a .08 µm surface finish, per contract requirements. QA Inspector verified the indications were present and measured the depths to be approximately . 5mm-1mm, deep, approximately 2-4mm long and approximately 2-4mm wide. See attached picture below.
Note: QA Inspector was later notified by OIW that a qualified welder and QC would be arriving at AG Machine shop on 11/2/09, to perform the weld repairs, on the indications, prior to AG continuing the final machining process.

Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.
The QA Inspector observed at Oregon Iron Works: 5 OIW production personnel and 2 QC Inspectors.
The QA Inspector observed at AG Machine shop: 1 Machinist and 1 Supervisor.
The QA Inspector noted that the following were present OIW Vancouver paint shop: 1 Painter and 1 Supervisor.

WELDING INSPECTION REPORT

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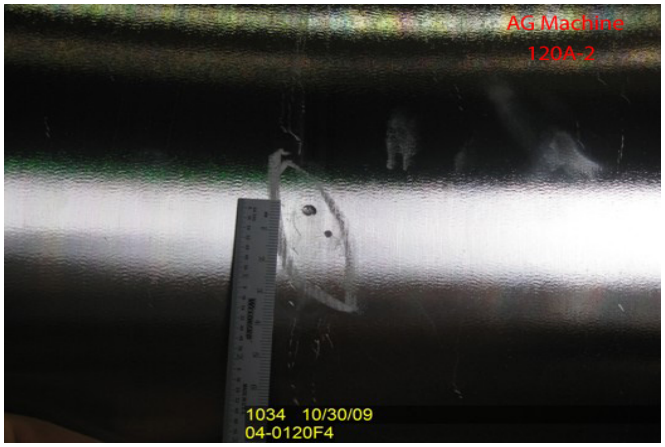

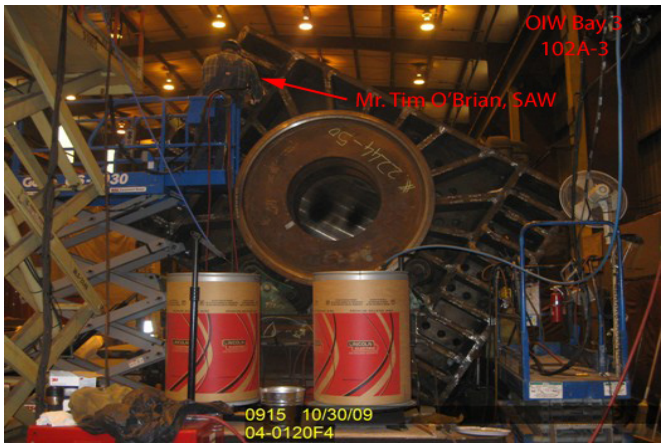

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer